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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KUHAR, ANTHONY J

ART UNIT

PAPER NUMBER

1754

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/904,312

Applicant(s)

EIJSBOUTS, SONJA

Examiner

Anthony J Kuhar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 16-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

It is noted that there is a second set of claims numbered as 16-19. Per Rule 1.126, these claims have been renumbered as 21-24, respectively.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-15 and 21 drawn to a catalyst composition comprising a combustible organic binder, classified in class 502, subclass 172.
- II. Claims 16-20, drawn to a process for preparing a catalyst comprising a combustible organic binder and pyrolysis to decompose the organic binder to carbon, classified in class 502, subclass 185.
- III. Claims 22, drawn to a method of processing hydrocarbon feedstock, classified in class 585, subclass 700+.
- IV. Claims 23 and 24, drawn to a method of regenerating a catalyst, classified in class 502, subclass 56.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the catalyst of the invention can be made by another method such as spray pyrolysis.

Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the

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product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case another product can be used for hydrocarbon processing, such as a catalyst without organic binder.

Inventions I and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions. Invention I is a catalyst and invention IV is a way to regenerate a catalyst.

Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions. Invention II is a method for making a catalyst and invention III is a method for using the catalyst in hydrocarbon processing.

Inventions II and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions. Invention II is a method for making a catalyst and invention IV is a method for rejuvenating a catalyst.

Inventions III and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different

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inventions have different functions. Invention III is a method for using the catalyst in hydrocarbon processing and invention IV is a method for rejuvenating a catalyst.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Louis A. Morris on 12/18/02 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-24 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because it recites improper Markush language.

Claim 13 is indefinite because "...for the combustible binder precursor optionally after pyrolysis, comprises carbon as its major component" is ungrammatical and is indefinite as to what "its" refers to.

Claim 14 is indefinite because it recites improper Markush language.

Claim 21 is indefinite as it is drawn to a process but depends on a product claim and it is unclear how the “sulfidation step” is included in the product claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 9, 13-15, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Young ‘947.

Young ‘947 teaches in column 2, lines 19 and 20 and column 3, lines 55-61 combining molybdenum and tungsten metals with organic modifiers such as cellulose, polyacrylamides, and polyolefins which combust to form channels and voids. The group VIB metals can be in sulfided form (see column 3, line 24). The group VIB metal components are present between 5 and 40 percent by weight, along with nickel, cobalt, or iron being present up to 20 percent by weight (see column 5, lines 15-17 and 20-29).

Claims 1-4, 5-8, 9, and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by DeAngelis ‘317.

DeAngelis ‘317 teaches in column 3, lines 30-35 base metals such as nickel, chromium, tungsten, and iron. They are combined with an inorganic oxide and an organic binder such as

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methyl cellulose, and polymerized furfuryl (see column 3, lines 43-60). One preferred embodiment can have 90% iron and 10% chromium (see column 4, lines 25-42). Column 4, line 61 teaches the organic binders oxidize to form a strong sintered body.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by JP-57-119837.

The English language abstract of JP 57-119837 teaches more than one of Co, Ni, Fe, and Cr compounds and also an Mo compound are combined with organic materials such as cellulose and polyvinyl alcohol in the amount of 1 to 10 weight percent. The resulting composition is molded and fired to form a catalyst composition. Although the weight percent of the metals are not disclosed, since no other materials are disclosed besides the metals and organic binder, it appears that the metals inherently compose 90% of the catalyst composition.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-15 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cavalli '042 in view of Young '947.

In column 2, lines 1-20, Cavalli '042 teaches using iron and molybdenum oxides to form a powder. The iron oxide portion is 5-90% by weight of the total molybdenum and iron oxides. Column 2, line 66 to column 3, line 15 teaches using a binder such as hydroxypropyl cellulose in the amount of 0.5% to 5% by weight of the oxides. The paste obtained is extruded and oxidized. Cavalli '042 does not teach an additional group VIB metal such as tungsten.

However, in Young '947, column 2, lines 19 and 20 and column 3, lines 55-61 teach combining molybdenum and tungsten metals with organic modifiers such as cellulose, polyacrylamides, and polyolefins which combust to form channels and voids. The group VIB metals can be in sulfided form (see column 3, line 24). At the time the invention was made, it would have been obvious to one of ordinary skill of the art to additionally add tungsten compound to the catalyst of Cavalli '042 because Young '947 shows molybdenum and tungsten as functional equivalents in column 2. The combined effect of separately known to work products would be obvious; that are known to work separately would be obvious to combine for their added combined effect. See *In re Kerkhoven*, 205 USPQ 1069

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 57-119837.

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The English language abstract of JP 57-119837 teaches more than one of Co, Ni, Fe, and Cr compounds and also an Mo compound are combined with organic materials such as cellulose and polyvinyl alcohol in the amount of 1 to 10 weight percent. The resulting composition is molded and fired to form a catalyst composition. Although the percentage weight of the metals are not disclosed, it would appear that the metals compose 90% of the catalyst composition because there are no other materials disclosed besides the metals and organic binder.

Claims 1-4, 5-6, 9-10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1986-220741.

JP 1986-220741 teaches on page 8 of the machine translation using an ultra-fine powder made by the thermal decomposition of carbonaceous compounds as a carrier. Page 9 teaches oxidation of the carbonaceous compounds forms microholes and surface coarseness not included in ordinary porosities. Page 10 teaches adding one or more of Cr, Mo, W, Fe, Co, and Ni to the ultra-fine powder to form a catalyst composition. Page 15 teaches the above metals may be carried on the fine powder in the amount of up to 50 wt %. If the metals alone comprise up to 50% of the catalyst composition, then the metals calculated as oxides would comprise even more of the composition. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, in re Malagari, 182 USPQ 549.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J Kuhar whose telephone number is 703-305-7095. The examiner can normally be reached on 8:45 am - 5:15 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stan Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

AK

AK
January 2, 2003



**STEVEN BOS
PRIMARY EXAMINER
GROUP 1100**